Report of the Interdepartment Radio Advisory Committee

January 1 through December 31, 2005

FORWARD

The Interdepartment Radio Advisory Committee (IRAC) serves in an advisory capacity to the Assistant Secretary of Commerce for Communications and Information (Administrator of the National Telecommunications and Information Administration, NTIA) in the discharge of responsibilities pertaining to the use of the electromagnetic spectrum, as contained in Executive Order 12046, the National Telecommunications and Information Administration Organization Act, as revised and Department of Commerce Order 10-10. In this capacity, the IRAC assists the Assistant Secretary in assigning frequencies to U.S. Government radio stations and in developing and executing policies, programs, procedures, and technical criteria pertaining to the allocation, management, and use of the electromagnetic spectrum.

The IRAC consists of representatives appointed by each of nineteen U.S. Government departments and agencies, and a liaison representative appointed by the Federal Communications Commission (FCC). To perform its duties, the IRAC operates via a main committee, six subcommittees, the IRAC Secretariat, and various ad hoc groups.

This report provides a summary of the activities of the IRAC January 1 through December 31, 2005.

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REPORT OF THE INTERDEPARTMENT RADIO ADVISORY COMMITTEE FOR 2005

INTRODUCTION

This report describes the accomplishments and activities of the Interdepartment Radio Advisory Committee (IRAC) and its subcommittees and ad hoc groups for the period January 1 through December 31, 2005. In accordance with Article XI, Section 1.3.2, of the IRAC By-Laws: IRAC Subcommittee Chairpersons and Ad Hoc Group Conveners provide status reports to the IRAC in January and July of each year. These reports include the accomplishments during the six-month period and the projected completion date of any specific tasks outlined in the terms of reference.

BACKGROUND

The IRAC, organized by mutual agreement of the federal departments concerned on June 1, 1922, reconstituted on October 6, 1952, with status, mission, and functions officially defined on December 10, 1964, was continued by the Assistant Secretary of Commerce for Communications and Information (Administrator of the National Telecommunications and Information Administration (NTIA)) pursuant to Executive Order 12046 of March 27, 1978 and the National Telecommunications and Information Administration Organization Act, as revised. The IRAC serves in an advisory capacity to the Assistant Secretary and reports to the Deputy Associate Administrator (DAA) for Domestic Spectrum Management, Office of Spectrum Management (OSM).

The IRAC assists the Assistant Secretary in assigning frequencies to U.S. Government radio stations and in developing and executing policies, programs, procedures, and technical criteria pertaining to the allocation, management, and use of the electromagnetic spectrum. National frequency coordination and assignments are affected through the IRAC and its substructure by the observance of specific procedures contained in the NTIA *Manual of Regulations and Procedures for Federal Radio Frequency Management* (NTIA Manual).

For eighty-three years, the IRAC has provided effective advice regarding radio spectrum matters. The achievements and activities described in this annual report demonstrate how, through the IRAC, the Federal departments and agencies continue to work together for the common interests of the United States as a whole in the performance of federal spectrum management.

STRUCTURE OF THE IRAC

The permanent structure of the IRAC consists of a main committee, the Secretariat, and six subcommittees, the Emergency Planning Subcommittee (EPS), Frequency Assignment Subcommittee (FAS), the Radio Conference Subcommittee (RCS), the Spectrum Planning Subcommittee (SPS), the Space Systems Subcommittee (SSS), and the Technical Subcommittee (TSC). In addition, the IRAC establishes ad hoc groups to assist in the resolution of specific tasks. During 2005, the IRAC employed ad hoc groups dealing with coordination with Mexico (Ad Hoc 170), coordination with Canada (Ad Hoc 181), domestic implementation of the results of World Radiocommunication Conferences (WRCs) (Ad Hoc 206), improvement of federal spectrum management (Ad Hoc 213), and public safety communications (Ad Hoc 214).

The IRAC is comprised of a representative appointed by each of nineteen U.S. Government departments and agencies. Liaison between the IRAC and the Federal Communications Commission (FCC) is affected by a representative appointed by the Commission. The basic role of representatives appointed to serve on the IRAC is to function, when in committee, in the interest of the United States as a whole. The IRAC also designates observers where federal entities need to follow the work without participating as a member.

NTIA's Office of Spectrum Management (OSM) supplies the chairpersons and secretaries for the main committee and each of the subcommittees. The main committee of the IRAC also has a vice-chair from OSM and from one of the IRAC agencies. Ad Hoc Groups are led by conveners from the federal agencies or OSM and secretaries are generally provided by OSM.

Officers (appointed by NTIA):

Chairman – Karl B. Nebbia (NTIA/OSM)
Vice Chairman – Paul C. Roosa, Jr. (NTIA/OSM)
Executive Secretary – Stephen R. Veader (NTIA/OSM)
Agency Vice Chairman – Joseph D. Hersey, Jr. (Coast Guard)

Department and Agency Representatives:

Agriculture - Thomas N. Thomison
Air Force - Fred Moorefield
Army - Stuart Timerman
Broadcasting Board of Governors (BBG) - Edward Wickenhofer
Coast Guard - Joseph D. Hersey, Jr.
Commerce - James Mentzer
Energy - George A. Dudley
Federal Aviation Administration (FAA) - Michael Richmond
Homeland Security - Julio R. Murphy

Interior - Arthur Nelson
Justice - Merri Jo Gamble
National Aeronautics and Space Administration (NASA) - David P. Struba
National Science Foundation (NSF) - Tomas E. Gergely
Navy - Thomas Kidd
Postal Service - Keith Hyatt
State - William H. Grigsby
Transportation - Gregory A. Wheeler
Treasury - Ralph Robles
Veterans Administration (VA) - Michael A. Mirando
Federal Communications Commission (FCC) - Ronald Repasi (Liaison)[1]

During 2005, the Department of Health and Human Resources withdrew from membership in the IRAC.

The IRAC observers include:

Defense Information Systems Agency (DISA) - Theresa Hughes
Department of Defense - Steven R. Bates

ACTIVITIES OF THE IRAC

The IRAC held twenty-two meetings in 2005. At these meetings, the IRAC considered and made recommendations to NTIA concerning:

- Revisions to the NTIA Manual;
- Policies for federal use of the radio spectrum;
- Draft FCC decision documents (under the procedures specified in the NTIA/FCC Memorandum of Understanding signed January 31, 2003);
- FCC public documents issued under the Administrative Procedures Act;
- Draft NTIA reports, plans, and analyses
- Draft NTIA actions regarding NTIA's spectrum reform activities; and
- Recommendations developed by each of the subcommittees and ad hoc groups, primarily but not limited to preliminary views and proposals for WRCs, and positions and proposals for negotiations with Canada and Mexico

The IRAC also received briefings from federal departments and agencies as well as private sector entities.

[1] The FCC, as the regulator of non-federal use of telecommunications and non-federal use of the radio spectrum, is not a member of the IRAC; however, the Commission has designated an FCC Liaison Representative to work with the IRAC and its subcommittees. As a federal agency with communications requirements of its own, the FCC sits as a member of the Frequency Assignment Subcommittee.

MAJOR REVISIONS OF THE NTIA MANUAL

While the IRAC regularly recommends modification of the NTIA Manual, during 2005, the IRAC recommended a number of major revisions. NTIA adopted each of these recommended revisions.

The IRAC recommended revision of the NTIA Manual Preface to eliminate unnecessary background and organizational information that exists elsewhere in the Manual.

The IRAC recommended revisions to **Chapter 1 – Authority and Organization** to eliminate duplicative organizational information, to update the IRAC by-laws (membership information, membership processes, substructure), to align substructure processes where appropriate, to clarify work procedures including electronic procedures, and to clarify the participation of observers, assistants, consultants, advisors, visitors and guests. These revisions recognized for the first time the significant amount of IRAC work and documentation that is handled by electronic means.

The IRAC recommended revisions to **Chapter 3 – International Matters** to reflect agreements reached with Mexico concerning coordination spectrum use in certain bands in the border area.

The IRAC recommended changes to **Chapter 4 – Allocations, Allotments and Plans** based on the outcome of WRCs 1997, 2000, and 2003. These revisions paralleled FCC rulemakings, including one to implement the results of the WRCs. Completing the results of WRC 2003 within two years represented a significant step forward with respect to earlier WRCs.

The IRAC recommended major revisions to **Chapter 11 – Public Access to the Federal Spectrum Management Process** to clarify the procedures for providing inputs to the IRAC, for requesting information on federal operations, for requesting access to spectrum allocated to the federal government, and for providing advice to NTIA. Based on this recommendation, NTIA created a location on the IRAC website http://www.ntia.doc.gov/osmhome/PresentationsToIRAC.html to provide public notice of briefings from non-federal entities and the associate briefing materials.

The IRAC supported the implementation of a new annex to the NTIA Manual, **Annex O – Relocation of Federal Government Radio Systems in Accordance with the Commercial Spectrum Enhancement Act (CSEA**) to institute procedures for relocation of federal agencies' radio systems based on recent legislation. NTIA, in coordination with the IRAC, then used these procedures in providing to the FCC information regarding the cost of relocating federal operations in the 1710-1755 MHz band in preparation for an auction for Advance Wireless Services.

During the last quarter of 2005, the Chairman initiated a plan for review of the entire NTIA Manual. The IRAC supported the assignment of this review to designated components of OSM and the IRAC. A plan will be created in early 2006.

POLICY DEVELOPMENT

The IRAC identified a number of areas that required development of policies to meet the requirements of the federal department and agencies.

The IRAC developed and recommended a policy to cover federal use of **Global Positioning System (GPS) re-radiators at fixed locations for the purpose of experimentation and testing of GPS receivers** under specified control criteria. Federal agencies use these devices to test GPS receivers on aircraft, weapon systems, and other technologies that rely on GPS location data.

The IRAC recommended a policy to allow the operation of **ultrawideband systems at fixed locations, where the system characteristics would not be permitted under rules pertaining to unlicensed use**. The policy includes an approach for evaluating spectrum supportability and coordinating this use. Initial federal requirements may include use for security surveillance of specific locations.

The IRAC recommended a policy to cover **federal use of unlicensed technologies authorized for non-federal use via waiver of the FCC's Part 15 Rules**. While the NTIA Manual authorized the federal departments and agencies to purchase or develop unlicensed devices linked to rules developed from the FCC Part 15 rules, the NTIA Manual did not state what agencies could do when the devices operated under a waiver. The IRAC recommended a policy that provides for purchase and use of these devices except as specifically identified by the Manual. This allows the IRAC to identify systems that would not qualify, but in general accepts the value of the agencies having access to devices that are available to non-federal users by waiver.

The IRAC recommended a policy for **federal use of unlicensed technologies for safety related purposes**. This policy recognizes that certain safety functions may be served by unlicensed technologies. However, such uses have inherent risks because they do not receive spectrum protection from interference. Federal agencies need to consider this factor before implementing such systems.

The IRAC recommended **clearing of all users from the 162.025 MHz Automatic Identification System (AIS) channel**. Based on this recommendation, the IRAC established a schedule for moving federal users. The IRAC discussed the clearing a non-federal user from 162.025 MHz AIS channel. The FCC issued a notice to the licensee and the licensee vacated the frequency.

Agencies of the IRAC that perform satellite communications via **federal earth stations operating through commercial satellites** recommended that NTIA work with the FCC to ensure that the federal earth stations be given protection equal to that of non-federal earth stations. Federal operations using commercial satellites currently have no regulatory standing. Given that non-federal fixed operations share the spectrum on a primary basis, federal earth stations could receive interference or be required to move location or frequency at any time. This represents a risk to federal missions and tax payer investment.

DRAFT FCC DECISION DOCUMENTS UNDER THE PROCEDURES SPECIFIED IN THE NTIA/FCC MOU

In accordance with the NTIA/FCC MOU dated January 31, 2003, the FCC cooperates with NTIA and endeavors to give notice of all proposed actions that could potentially cause interference to government operations. Where possible, such notice is given in time for the NTIA to comment prior to final action and a minimum of 15 business days prior to final action. A different review period may be agreed to by NTIA's Associate Administrator for Spectrum Management and the FCC's Chief of the Office of Engineering and Technology. Final action by the FCC, however, does not require approval of the NTIA. NTIA seeks the IRAC's input on these drafts in sufficient time to meet the 15 business day requirement.

During 2005, the IRAC reviewed twenty-seven of these draft decisions, providing inputs in sufficient time to enable NTIA to respond within the allotted period. The draft decisions included FCC draft Public Notices, Notices of Inquiry, Report and Orders, Memorandum, Opinion and Orders, satellite Order and Authorizations, and FCC responses to waiver requests.

FCC PUBLIC DOCUMENTS ISSUED UNDER THE ADMINISTRATIVE PROCEDURES ACT

The IRAC reviews FCC documents that are circulated publicly when those documents may have an impact on federal use of the radio spectrum. Where appropriate, the IRAC reviews associated public comments and reply comments recognizing that the FCC bases decisions on the public. As required, the IRAC may recommend that NTIA respond for the purpose of entering in the public record the Executive Branch views.

GPS Re-radiators: The IRAC opposed a petition to the Commission to allow the use of devices that retransmit GPS data (GPS re-radiators) for a variety of purposes. The IRAC concluded that the need for the devices was unclear and the required technical information and controls were not adequate. NTIA supported this opposition. Federal agencies also raised concern regarding the sale of GPS re-radiators. These devices were being sold by a number of companies through Internet or other retail sales mechanisms. These devices, while intended to help GPS receivers acquire a GPS signal, pose a potential interference risk to GPS signal reception. In response, the FCC investigated and

sent letters to the companies. The devices were being marketed at Part 15 devices, but they did not comply with Part 15 rules to avoid the restricted bands. Most of the companies responded quickly to withdraw the devices from the market. The IRAC found that some of the federal agencies had bought the devices and had requirements for them. Requirements for the devices led to the federal policy and NTIA Manual change discussed in the previous section.

Unlicensed Use of TV Spectrum: The IRAC reviewed a notice of proposed rulemaking dealing with allowance for unlicensed use of the "white space" in the TV bands. Within the IRAC, the military departments recommended that NTIA call attention to the ongoing use of this "white space" for DOD training operations using its SINCGARS system. This use has occurred for many years on a coordinated basis and is essential to meet DOD training requirements.

WRC-03 Implementation: The IRAC reviewed the FCC's implementation of the results of WRC-03. This outcome was significant in that it was completed within two years of the completion of the conference. Many of the allocation changes supported federal spectrum requirements.

Maritime Safety Communications: The IRAC provided recommendations on a number of FCC activities potentially impacting the use of Automatic Identification System (AIS) equipment. NTIA worked closely with the Coast Guard to ensure that the United States could implement this system and provide for this international maritime safety activity.

Mobile-Satellite Service Ancillary Terrestrial Component (MSS ATC): The IRAC reviewed license applications for MSS ATC systems and provided NTIA advice regarding the protection of radionavigation-satellite spectrum from 1559-1610 MHz. In each case, the MSS ATC operators modified their applications to meet these protection requirements.

Cognitive Radio: The IRAC reviewed the FCC NPRM on cognitive radio, supporting a cautious and limited testing of the concept.

Medical Implant Communication Service (MICS): The IRAC considered waiver requests to provide greater flexibility for specific MICS devices. Given that these devices operate in the same frequency band with radiosonde essential to weather reporting, the IRAC (particularly the Department of Commerce) analyzed the proposals, noting that they did not represent an interference risk to the radiosonde operations. However, if a radiosonde is operating, MICS devices in the area will receive interference. Based on the assertion of MICS representatives that the MICS device operations were not time critical (If they receive interference, they will merely transmit at another time.), the IRAC supported the waivers.

Ground Penetrating Radars: The IRAC reviewed waiver requests for ground penetrating radars intended to be used at high speed. The radars do not meet the Part 15 limits when operated at high speed. The IRAC could not support the waivers due to the lack of adequate data preventing analysis of the impact to federal operations.

High Powered Fixed UWB: The IRAC reviewed a request for use of a fixed location surveillance UWB system that operated above the Part 15 limits. The manufacturers proposed to protect radiocommunications by offsetting the higher power, by separating the devices from the boundary of large premises with specialized security requirements. Some federal agencies indicated that they had requirements for the devices. IRAC analysis led to the NTIA Manual and policy noted above.

Personal Screening Devices: The IRAC reviewed a request for 24.25-30 GHz personal screening security devices to be used at airports and other transportation sites. The IRAC recommended that measurement techniques be developed prior to further consideration of the technology.

Multi-Band Orthogonal Frequency Division Multiplexing: The IRAC reviewed an FCC Order Regarding a Petition for Waiver of the Part 15 UWB Regulation Filed by the Multi-Band Orthogonal Frequency Division Multiplexing (MB-OFDM) Alliance Special Interest Group. The IRAC had concerns regarding the definitions used

Disposable Video Devices: The IRAC reviewed and supported a request for a waiver of the Part 15 rules to accommodate the use of disposable video devices that could be thrown over barriers to provide video surveillance in law enforcement or other public safety situations. The IRAC recommendation on this item led to further discussions and a federal policy regarding federal use of devices that were authorized through such a waiver.

DRAFT NTIA REPORTS/ANALYSIS PLANS

HR 5419: NTIA drafted a response to HR 5419, also known as the Commercial Spectrum Enhancement Act (CSEA), recommending options to compensate federal users in cases where spectrum that had been reallocated for non-federal use. The CSEA requires that "the Administrator of the National Telecommunications and Information Administration shall submit to the Energy and Commerce Committee of the House of Representatives and the Commerce, Science, and Transportation Committee of the Senate a report on various policy options to compensate Federal entities for relocation costs when such entities' frequencies are allocated by the Commission for unlicensed, public safety, shared, or non-commercial use" The draft report fulfilled the requirement of the CSEA to provide policy options for funding relocation costs. The IRAC provided comments and revisions to the draft report.

GPS Protection Plan: The IRAC provided comments and proposed revisions regarding and Commerce draft GPS Protection Plan required by the President's positioning, navigation, and timing (PNT) policy defined on December 15, 2004. The policy directs the Secretary of Commerce to:

- In coordination with the Secretaries of State, Defense, and Transportation and the Administrator of NASA, seek to protect the radio frequency spectrum used by GPS and its augmentations through appropriate domestic and international spectrum management and regulatory practices.

- In coordination with the Secretaries of Defense and Transportation, and the Administrator of NASA, facilitate cooperation between the United States Government and U.S. industry as appropriate to identify mutually acceptable solutions that will preserve existing and evolving uses of space-based PNT services, while allowing for the development of other technologies and services that depend on use of the RF spectrum.

Radar Spectrum Engineering Criteria (RSEC) Report: The IRAC reviewed an NTIA draft report on the Radar Spectrum Engineering Criteria (RSEC) Report. The report proposed new radar measurement procedures.

DRAFT NTIA ACTIONS REGARDING SPECTRUM REFORM ACTIVITIES

Many of the departments and agencies represented in the IRAC played a significant role in the working level groups established by NTIA to move forward the work under the President's spectrum reform effort. Recognizing that not all IRAC members participated in these groups, some of the outputs of the working level groups were provided to the IRAC for review.

The IRAC reviewed draft **changes to the NTIA/FCC MOU recommending text to add provision for review by an Executive Branch Policy Coordinating Committee (PCC)** when necessary. This approach would provide the opportunity for high level review of the FCC draft rulemakings where there may be an impact to federal operations. The IRAC provided comments and revisions to the draft text.

The IRAC recommended **modification of the responsibilities of the FCC's Defense Commissioner** to include the areas of public safety.

The IRAC reviewed a draft **NTIA Plan to Identify and Implement Incentives for Efficient Spectrum Use**.

OTHER ACTIVITY

IRAC Retreat: NASA hosted a retreat in January 2005 at the Kennedy Space Center. The retreat was linked to the scheduled IRAC meeting and included a tour of the Kennedy Space Center. The retreat focused on policy and process issues not generally discussed in the formal meeting sessions.

Exercise PINNACLE: Eleven of nineteen IRAC agencies participated in Exercise PINNACLE. The exercise presented the opportunity for the agencies to demonstrate their spectrum management capabilities under a continuity of operations scenario.

Review of Proposed Wind Energy Sites: Recognizing the increasing use of wind energy to provide a portion of the nation's energy resources and the potential signal blockage caused by wind mills, the IRAC, in consultation with wind energy representatives agreed to review proposals for new wind energy sites to determine if they presented a potential for blocking federal communication signals, primarily for fixed point to point links. During 2005, the IRAC reviewed 11 proposed sites.

Ratification of WRC Results: IRAC agencies expressed concern regarding the time required to complete U.S. action regarding the outcomes of WRCs. The State Department will consider other approaches to WRC results since they are highly technical in nature and the process of seeking Senate advice and consent has taken many years. The lack of ratification was viewed by some agencies as raising issues regarding U.S. implementation of certain international requirements for interoperability.

ACTIVITIES AND RECOMMENDATIONS OF THE IRAC SUBCOMMITTEES AND AD HOC GROUPS

The permanent substructure of the IRAC consist of the Emergency Planning Sub-committee (EPS), Frequency Assignment Subcommittee (FAS), the Radio Conference Subcommittee (RCS), the Spectrum Planning Subcommittee (SPS), the Space Systems Subcommittee (SSS), the Technical Subcommittee (TSC), and the Secretariat. The IRAC established terms of reference, monitors the work, and considers the recommendations of those groups that make up the IRAC substructure.

Emergency Planning Subcommittee (EPS)

The Emergency Planning Subcommittee shall formulate, guide, and review National Security Emergency Preparedness (NSEP) planning for spectrum-dependent systems. In the furtherance of the above the EPS shall specifically: 1. Maintain the NTIA Emergency Readiness Plan for Use of the Radio Spectrum (ERP), Parts I, II, III, IV, and V to reflect current plans and procedures; 2. Review, in accordance with the provisions of Chapters 1, 7, and 10, NTIA Manual (Sections 1.4.2 (Article V, Section 7), 7.3.3, 10.1.5, 10.5.1, 10.5.5, and 10.5.7), the NSEP functions sup-ported by spectrum-dependent systems and their proposed, associated Telecommunications Service Priorities for Radiocommunications or TSP-Rs (spectrum-use priorities); and, 3. Ensure emergency spectrum management planning and practices are in accordance with current NSEP telecommunications policy.

Officers and Members:

Chairman – William A. Belote, Jr.
Vice Chairman - Stephen R. Veader
Secretary - Alan Frable

Agriculture	Justice
Air Force	NASA
Army	National Security Agency
BBG	NSF
Coast Guard	Navy
Commerce	State
Energy	Treasury
FAA	VA
Homeland Security	
Interior	FCC (Liaison)

Activities: The EPS met on January 26, March 30, and June 29, 2005. Representatives of the following departments and agencies attended and participated in meetings as follows: Air Force (2), Army (1), Coast Guard (2), Commerce (1), Defense (2), NASA (2), Navy (3), and VA (2).

At the three meetings, members present addressed the supported missions, spectrum-dependent systems, and proposed, associated Telecommunications System Priority for Radiocommunications (TSPRs) for each system as follows:

Air Force: 15 systems reviewed and concurred with all TSP-Rs
Army: 7 systems reviewed and concurred with all TSP-Rs
Commerce: 3 systems reviewed and concurred with all TSP-Rs
Energy: same 2 systems tabled at each meeting due to no DOE representative being present
Navy: 6 systems reviewed and concurred with all TSP-Rs.

Metrics were maintained relative to meeting agendas, meeting minutes, and meeting participation. Agendas for the meetings were distributed from 13-14 days in advance of the meetings. Meeting minutes were distributed from 1-4 days after the meeting.

Frequency Assignment Subcommittee (FAS)

The Frequency Assignment Subcommittee is charged with recommending approval/disapproval of requests for frequency assignments subject to final approval by the Assistant Secretary.

Officers and Members:

Chairman - Gordon A. Crandall III
Vice Chairman - Thomas F. Woods, Jr.
Secretary - Verleanor Cobb

Agriculture - Gail A. Burley
Air Force - Carolyn Causey
Army - Lori Poppenhager
BBG - Edward W. Wickenhofer
Coast Guard - William Kautz
Commerce - Carmelo Rivera
Defense - Brian Brown
Energy - Pamela E. Main
FAA - Timothy J. Pawlowitz
FCC - Kathryn Hosford
GSA - Rodney E. Williams
Homeland Security - Rodney E. Williams
Interior - Christopher H. Lewis
Justice - Carolyn Thomas
NASA - James J. Madon
NSF - Dr. Andrew W. Clegg
Navy - Thomas N. Oliver
Transportation - James Arnold
Treasury - Ralph Robles
Postal Service - Keith Hyatt
VA - Michael A. Mirando

Activities: The FAS held twelve regularly scheduled meetings in 2005. It conferred on 42,238 requests for frequency assignment action. It also reviewed 7110 frequency assignments considered significantly overdue for CYs 95 /96 and introduced a new list for review of 4027 assignments for CY96. The review for CY05 was not completed due to several agency requests for review extensions. The review for CY96 assignments was extended to allow more time for individual agency review. The FAS considered several improvements and updates for its on-going investigation of performance improvements. The FAS is currently drafting new rules and procedures for Special Temporary Assignments (STAs). The FAS processed 620 STA requests in this twelve-month period. For the ongoing narrowbanding task, the FAS adopted a standardized format for future narrowband waiver requests and a waiver request response spreadsheet. The FAS reviewed 21, 944 waiver requests from 18 agencies. The FAS made several allotment changes for the band 162-174 MHz.

Radio Conference Subcommittee (RCS)

The Radio Conference Subcommittee is responsible to the IRAC for the carrying out of those functions given in Article II that relate to preparing for International Telecommunication Union (ITU) conferences, including the development of recommended U.S. proposals and positions. In the furtherance of the above the RCS undertakes preparatory work relating to international radio conferences. 1.) Develop recommended proposals for consideration by the Inter-American Telecommunications Commission (CITEL), 2.) Maintain close liaison with related conference preparatory activities of the United States for the ITU Radiocommunication Sector (ITU-R) including the ITU-R Conference Preparatory Meetings held prior to Radiocommunication Conferences, 3.) Coordinate with other U.S. groups considering radio conferences related issues within other international and regional organizations such as the North Atlantic Treaty Organization, the European Conference of Postal and Telecommunications Administrations, the International Maritime Organization, the International Civil Aeronautics Organization, the World Meteorological Organization, and the Asia-Pacific Telecommunity; 4.) Take into account: (a) Current and planned national and international frequency uses, and the optimum placement of radio services with a view to the most effective use of spectrum in the overall national interest; (b) The anticipated needs of all radiocommunication services at various points in the future; (c) New developments in existing services; (d) New techniques, the application of which may require revision of regulations concerning radio frequency matter; and, (e) New services for which the current regulations makes no provisions.5. Undertake preparatory activities, including the development of recommended U.S. proposals and positions, related to ITU Plenipotentiary Conferences, ITU Radiocommunication Assembly, ITU Council as it pertains to matters involving radiocommunications, the Radiocommunication Advisory Group, and the Radio Regulations Board.

Officers and Members:

Chairman – James Vorhies
Vice Chairperson - Darlene Drazenovich
Secretary - William Mitchell

Agriculture	Energy	NSF
Air Force	FAA	State
Army	Homeland Security	Treasury
BBG	Interior	VA
Coast Guard	Justice	
Commerce	NASA	FCC (Liaison)
Defense	Navy	

Activities: The RCS addressed three primary goals for 2005. 1) Maintain current work plans for each WRC agenda item, 2) Complete as many of the preliminary view documents as possible and 3) Start the initial work on the draft U.S. Proposals for WRC-07. The ground work for these activities was conducted in the RCS Work Groups.

The RCS Work Groups were established during the initial planning for WRC-07 to assure that all the agenda items were addressed.

The following six work groups were established to consider the WRC-07 agenda items.

RCS WG-1 - Darlene Drazenovich NTIA - Mobile, Aeronautical Mobile, RN and RL Services
RCS WG-2 - Rob Haines - Space Science Services
RCS WG-3 - Chris Hofer - FS, including HAPS, FSS, MSS and BSS
RCS WG-4 - Ed Brady - Services in MF and HF bands and Maritime Mobile
RCS WG-5 - Chris Hofer - Regulatory Procedures and associated technical criteria applicable to satellite networks
RCS WG-6 - Charles Glass - Future WRC Program and Other Issues

Each work group prepared documents for the agenda items they were tasked to address. The works plans outline the actions that are required to address each specific agenda item, including specifics tasks. The work groups were also responsible for drafting and submitting preliminary views and draft proposals to the RCS for consideration. The work groups also reviewed draft documents from the FCC WAC. Each of the work groups met several times during this period.

The RCS held eight meetings in 2005. During these meetings the RCS produced the following documents.

Works Plans: A total of 28 work plan documents were drafted, approved, and or updated. The work plans are working documents; three have been modified since their initial approval. The RCS has met 100 percent of its goal for the work plans.

Preliminary Views: In 2005 the RCS approved preliminary views for agenda items 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.12, 1.13, 1.14, 1.15, 1.16, 1.17, 1.18, 1.19, 1.21 and 7.2; coordination letters where addressed to the FCC concerning these items. NTIA in coordination with the FCC agreed to U.S. Preliminary Views for agenda items 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10 1.12, 1.13, 1.14, 1.15, 1.16, 1.18, 1.19, 1.21, and 2. The RCS has met 100 percent of its goal for this period for drafting preliminary views. The RCS has coordinated a total of 18 preliminary views; this equals 90 percent of the RCS total goal.

Proposals: In 2005, the RCS approved proposals for agenda items 1.5, 1.6, 1.12, 1.14, 1.18, and 7.2; coordination letters were addressed to the FCC concerning these items. This number equals to about 20 percent of total number of draft proposal and 100 percent of the RCS goal for this period. Please note agenda item 7.2 is concerned with the revision of the preliminary agenda for WRC-10. This is a complex agenda item that will consist of a number of minor proposals which will be tied together just prior to the conference. NTIA (RCS) in coordination with the FCC (WAC) agreed to U.S. Proposals for agenda items 1.5, 1.6 and 1.18. This number equals 100 percent of the RCS goal for this period.

The RCS drafted or considered 135 documents. Of the documents addressed to the IRAC for consideration about 20 percent of the documents required additional revision to meet the IRAC Chairman's approval.

Spectrum Planning Subcommittee (SPS)

The Spectrum Planning Subcommittee is responsible to the IRAC for the carrying out of those functions given in Article II that relate to planning for the use of the electromagnetic spectrum in the National interest to include the apportionment of spectrum space for the support of established or anticipated radio services, as well as the apportionment of spectrum space between or among government and non-federal and non-federal activities, and such other matters as the IRAC may direct.

In the furtherance of the above the SPS shall: 1. Maintain a continuing appraisal of the current and future needs of the various radio services and make recommendations to the IRAC for changes in the Table of Frequency Allocations or other actions, as appropriate; 2. Consider: (a) Current and planned National and International frequency uses, and the optimum placement of radio services with a view to the most effective use of spectrum in the overall National interest; (b) The anticipated needs of all radio services at various points in the future, e.g., 5, 10, 15, and 20 years ahead; (c) New developments in existing services; (d) New techniques, the application of which may require revision of the Table of Frequency Allocations; (e) New services for which the current Table makes no provisions; (f) Specific proposals for expansion, reduction, or other changes in the allocated frequency bands; and the International aspects of changes recommended to the IRAC. 3. In order to ensure electromagnetic compatibility among electronic systems and observance of the provisions of Section 8.2.5, develop procedures enabling the Subcommittee to: (a) Develop and maintain pertinent documentation on all planned and operational satellite systems including their technical and operational characteristics; (b) Ascertain in the early stages of system concept development, where compatibility may not exist; (c) Make recommendations as to potential electromagnetic compatibility problem areas, and proposed courses of action to resolve these problems; (d) Make recommendations as to technical parameters necessary to facilitate sharing between systems; (e) Review as appropriate the effectiveness of existing systems with a view toward rectifying compatibility deficiencies.

Officers and Members:

Chairman - Stephen Butcher
Vice Chairman - Craig Scammon
Secretary - Alan Frable

Agriculture	FAA	State
Air Force	Homeland Security	Treasury
Army	Interior	Postal Service
BBG	Justice	VA
Coast Guard	NASA	
Commerce	Navy	FCC (Liaison)
Energy	NSF	

Activities: The Spectrum Planning Subcommittee held twelve meetings in the period of January through December 31, 2005. Agendas for the meetings were distributed seven days in advance of each meeting.

Summary of Certification Actions:

Requests submitted to the SPS for review:	185
Requests tabled to the OSM Systems Review Branch (SRB):	135
Preliminary Assessments completed by the SRB:	104
Certification Actions approved by the SPS:	168
Certification Actions completed (approved by OSM DAA):	138
Average time (weeks) required to complete Certification Actions:	17

Systems reviewed by the SPS:

Air Force	Army	NASA
AEPLRS	Baron Services	GLORY
AeroVironment Data Link	Bridemaster E Series	MRO
AeroVironment Video	Global MW Dig Video	OCO
AFRL - Transportable	ICOM IC-F121 VHF Tran	
TRIBES	IFICS	Navy
AN/APG-70(V)	LCMR	AN/ARC-209B(V)1
AN/APG-63(V)1	M/A COM Trunked Radio	AN/PPS-5D
AN/APX-114 Air-to-Air Int	MOT MICOM-2 HF	AN/WSC-6 & 6A
AN/TSC-162 & 163	Motorola MT1500	CW Doppler DRX 2720
AN/USC-62 & USQ-161	MVRS-700S	Motorola XTS5000
ARTS	PACMERS	RAFT
BMT 85-1 & 65-2A	PAWSS	S-Band Cobra Judy
C/NOFS	THAAD	SEMCO VT-22
GATech Bi-Static CW	Trunked Sys Alaska	Sensis MDS
ITT Gilfillan MACS	Trunked Sys Ft Jackson, SC	SM-2
LSI-2000 IFF	Trunked Sys Ft Rucker, AL	SM-6
Motorola XTL5000	T5365	SM-6 ERAM

MSTCS
ORCLE
Space X-Launch Vehicle
Trunked Sys, LA AFB
Trunked Sys Wright-Patterson

Vertex VXR-7000

Commerce
I-M GOES
GOES N-Series

Energy
CFESat

T-1634 Telemetry
TWAR
X-Band Cobra Judy
29 Palms MDS

Recommendations to Change the NTIA Manual:

At the January 13, 2005 SPS meeting, the SPS approved a change to the NTIA Manual that adds a new requirement associated with the submission of requests to modify existing, approved certifications. The new requirement specifies that such requests include a copy of the certification for which modification is requested to enable expedited review by the membership. The change was forwarded to the IRAC for its review and subsequently forwarded to NTIA with a recommendation to amend Chapter 10 of the NTIA Manual accordingly. NTIA subsequently approved the Manual revision.

At the May 12, 2005 SPS meeting, the SPS approved a change to the NTIA Manual that adds a new requirement associated with the submission of Stage 3 and Stage 4 requests for certification of Identify-Friend-or-Foe (IFF) systems. The change was forwarded to the IRAC for its review and subsequently forwarded to NTIA with a recommendation to amend Chapter 10 of the NTIA Manual accordingly. NTIA subsequently approved the Manual revision.

Briefings:

At the January 13, 2005 SPS meeting, Mr. Tim Ritter of the Department of Justice briefed the subcommittee on its expansion of the Integrated Wireless Network in the states of Washington and Oregon. Mr. Ritter, the IWN Program Director, also answered questions from SPS members about the long-range plans for eventual IWN implementation throughout the United States.

At the April 14, 2005 SPS meeting, Bill Macha of the Navy briefed the subcommittee concerning it plans for experimental testing of the AN/WQR-3 Advanced Deployable System.

At the October 13, 2005 SPS meeting, Mr. Mike Mearns and Mr. Tim Minnix of the Navy briefed the subcommittee concerning the Navy's use of high-powered Digital Receiver–Coherent Signal Processor (DR-COSIP) radars to support the Strategic Systems Program and the Aegis Ballistic Missile Defense Program. The radars are designed and built by Northrop Grumman Xontech and operate in the band 5.4-5.9 GHz to provide high-resolution tracking and imaging of ballistic missiles.

SPS Working Groups:

SPS Working Group 5 (WG-5) is the only active SPS working group. SPS WG-5 is currently focused on the ongoing effort to establish the Equipment Location-Certification Information Database (EL-CID) capability as the standard means to prepare and submit requests for spectrum certification. WG-5 has held one meeting during the last six months. Additionally, the Chairman and the Vice-Chairman met twice with DoD SPS representatives to address specific issues that need to be resolved so that the military services can begin using the EL-CID software. Four EL-CID training classes were held in Annapolis, MD during the first half of 2005, and two training classes were conducted, at the Navy's request, at Pt. Mugu, CA. Version 4 (Revision 80) of the EL-CID program was delivered to NTIA's Office of Spectrum Management in September 2005

Space Systems Subcommittee (SSS)

The SSS is tasked by the IRAC to review, modify, develop, and maintain the procedures for national implementation of the space related provisions of the ITU Radio Regulations; advance publish, coordinate, and notify Government space systems; and to review and respond to data furnished by other administrations and the ITU regarding proposed space telecommunications systems.

Officers and Members:

Chairman - Chris Hofer (NTIA)
Coordinator - KaTrina Wylie (NTIA)

Air Force
Army
Commerce
DISA
Energy
FAA
NASA
Navy
NSF
State
FCC (Liaison)

Meetings Held and Documents Considered: The SSS held five meetings during this reporting period, and considered a total of 5,025 agenda items (an average of 1,005 items per meeting).

U.S. Government Advance Publications Considered

AIM
CP1
FORTE
GLORY
GOES-90W, GOES-100W, and GOES-105W
IRIS-1R through IRIS-11R
MTI
NOAA N
P-197-2 through P-197-5
TDRS 89E
THEMIS
USCP
USGAE-3R
USGAE-5R through USGAE-22R
USOBO-1R through USOBO-11R

U.S. Government CR/C Coordination Publications Considered

USGGR-3 and USGGR-4
USGGR-8
USGGR-11

U.S. Government Satellite Notifications Considered

AIM
AURA
DEEP IMPACT
EOS PM
MTI
NOAA KLM
P-197-1
SDO
THEMIS
USCSID-P

Major accomplishments during this period: The SSS is essentially a paperless meeting with a CD-ROM sent out to the participating members one week before the meeting is held. The agenda is now prepared one week before the CD-ROM is mailed out and emailed to the members to help them prepare their draft messages for the upcoming meeting. Messages are also tracked by filling in the To NTIA, To FCC, and To BR columns of the agenda and minutes of each SSS meeting, so that the Agencies know the status of each publication and message.

Technical Subcommittee (TSC)

The Technical Subcommittee performs related to the technical aspects of the use of the electromagnetic spectrum, and such other matters as the IRAC may direct. In furtherance of the above, the TSC: 1. develops recommended new standards and improvement of existing standards pertaining to use of the radio spectrum; 2. maintains awareness of the radio propagation (including natural radio noise) programs and needs of the federal government for purposes of evaluating and making recommendations leading to a better utilization of the radio spectrum; 3. evaluates and make recommendations, in the form of technical reports, on new and existing techniques from the standpoint of their ability to optimize use of the radio spectrum (recommendations to include implementation steps); 4. evaluates and make recommendations, in the form of technical reports, regarding the EMC capabilities and needs of the federal government in support of spectrum management, including techniques and criteria leading to greater inter- and intra-radio service sharing of available spectrum and the reduction of man-made radio noise and; 5. evaluates current and proposed efforts regarding: (a) the adequacy of the technical bases for spectrum management; (b) the effectiveness of specific programs with regard to improved use of the spectrum; and, (c) the need for new criteria, procedures, and methodologies for use of the spectrum.

Officers and Members:

Chairman - Edward Drocella
Vice Chairman - Mark Settle
Secretary - William Mitchell

Agriculture
Air Force
Army
Commerce
Energy
FAA
Homeland Security
Interior
Justice
NASA
Navy

FCC (Liaison)

Working Group 1 Chairman - Robert Sole
Working Group 9 Chairman - Larry Brunson

Activities: The major areas addressed by the TSC included: Radar Spectrum Engineering Criteria, Modifications to Annex J, Aeronautical Telemetry standards, and Software Defined Radio.

Radar Spectrum Engineering Criteria (RSEC): The TSC finalized an RSEC measurement report. This report describes suggested methods for measuring characteristics of primary radar systems for determining compliance with the standards in the RSEC. This report addresses measurement methods for measuring new and advanced radar systems using frequency-modulated and phase-modulated pulses; multi-mode radar systems with interleaving pulse modulations; variable pulse repetition frequencies; and distributed phased-array antennas with complex beam scanning techniques. This measurement report was approved by the TSC and the IRAC. The measurement report was published as an NTIA report. This measurement report does not address measurement procedures for the -20 dB necessary bandwidth since it is not part of the RSEC. A measurement procedure will be developed for the -20 dB necessary bandwidth. The RSEC measurement report and the measurement procedure for the -20 dB necessary bandwidth will be referenced in Annex M of the Manual of Regulations and Procedures for Federal Radio Frequency Management.

Annex J: Work continues on developing a new equation for the necessary bandwidth of radars that employ Linear Frequency Modulated (LFM) pulse signals. The current necessary bandwidth equation in Annex J overestimates the necessary bandwidth of LFM pulse radars which results in inefficient use of the radar spectrum. The Chairman of TSC Working Group 9 has developed several proposals to more accurately estimate the necessary bandwidth while allowing flexibility for different radar designs (e.g., high and low compression ratios). The Army presented a briefing by the Program Executive Office for Missiles and Space and the Missile Defense Agency to highlight their concerns with the necessary bandwidth proposals. The use of fast fourier transforms to compute the necessary bandwidth was proposed as an alternative to the necessary bandwidth equation in Annex J. The latest proposal for the necessary bandwidth equation for LFM pulse radars is a function of the compression ratio and is gaining some support with the military agencies. The output of TSC Working Group 9 is being used in the development of U.S. positions for ITU-R Joint Rapporteurs Group 1A-1C-8B.

Revision of Section 5.3.7 (Telemetry Standards): The Navy TSC representative proposed to revise Section 5.3.7 of the Manual of Regulations and Procedures for Federal Radio Frequency Management. The Navy proposal to change Section 5.3.7 is intended to clarify the information currently contained in this section by providing a link to the Range Commander Council telemetry standards. This would ensure that the current telemetry standards are used. The TSC approved the Navy proposal at the June meeting. The TSC Chairman is preparing a memorandum to the IRAC outlining the necessary modifications to Section 5.3.7.

Software Defined Radio: The NTIA Manual does not address software defined radio (SDR). There are no formalized rules and procedures for SDR. Each system is examined on a case-by-case (ad hoc) basis. Therefore, it is possible that inconsistent application of the ad hoc rules. Some applications fell through the cracks and were not recognized as SDR. The TSC Chairman recalled a briefing presented by the Defense Spectrum Office (DSO) that proposed changes to Chapter 5, 6, and 10 to formalize the SDR system review process. After further review by the TSC, it was determined that the DSO proposals were not appropriate for Chapter 5. An updated version of the DSO briefing is to be provided to the Spectrum Planning Subcommittee to determine which part(s) of the DSO proposals should be adopted in the Manual of Regulations and Procedures for Federal Radio Frequency Management.

Ad Hoc 170

The purpose of Ad Hoc 170 is to; 1) prepare draft positions on U.S.-Mexico telecommunications agreements that involve U.S. government spectrum; 2) prepare draft positions on implementation of agreements that involve U.S. government spectrum; and, 3) recommend changes to the NTIA Manual to support coordination with Mexico. Specific tasks of Ad Hoc 170 are; 1) formulates positions by reviewing essential factors in negotiations and addressing the impact of positions on member agencies. Recommends to the IRAC draft positions on negotiating and concluding agreements; 2) reviews difficulties encountered in realizing full implementation of agreements with Mexico and formulates positions to achieve successful implementation and ; 3) upgrades interference report form in Section 8.2.30 of NTIA Manual to improve accuracy of technical information provided to Mexico.

Ad Hoc 170 held meetings on January 6, January 18, February 17, March 1, March 24, April 28, May 4, May 19, June 22, August 5, August 16, August 24, October 24, November 7, and November 18th.

Officers and Members:

Convener – William H. Grigsby (State)
Secretary – William L. Mitchell (NTIA/OSM)

HLCC Teleconferences:

March 10, 2005

Working Level HLCC Meetings:

January 31 through February 5, 2005 held in Mexico City, Mexico
May 23 through 27, 2005 held in Washington, DC.

Seventh Meeting of U.S.-Mexico High Level Consultative Commission on Telecommunications (HLCC)

July 26 and 27, 2005 held in Mexico City, Mexico.

Activities: The activities of Ad Hoc 170 during the first period of 2005 were concentrated on the completion of the protocols for the 380-399.9 MHz and 406.1-420 MHz bands.

Related to the new protocol to share the 406.1-420 MHz band in the common border area, a diplomatic note was drafted which proposed the removal of two frequencies, 407.8500 MHz and 415.7000 MHz, from the Administrative Arrangement Concerning Radio Frequencies Used for Special Purposes (AA) so that the AA would not encumber the new protocol for the 406.1-420 MHz band.

The meetings, teleconferences with the Mexican telecommunications representatives and bilateral working group meetings held in Washington D.C. and in Mexico City, Mexico allowed both sides to find solutions for sharing mechanisms and to reach a final agreement so that the protocols could be signed at the Seventh Meeting of the U.S.-Mexico High Level Consultative Commission on Telecommunications (HLCC) in Mexico City in July 2005.

During the seventh meeting of the U.S.-Mexico High Level Consultative Commission (HLCC) on Telecommunications in Mexico City, senior level telecommunications officials of the two governments signed the two protocols covering the 380-399.9 MHz and 406.1-420 MHz bands to significantly reduce the potential of life-threatening cross-border interference in critical radio networks used by federal first responders, federal law enforcement, military security networks, federal emergency management and other federal radio communication networks in the U.S. border area. The protocols became effective when they were signed on Wednesday, July 27, 2005.

The protocols were signed by Ambassador David A. Gross, U.S. Coordinator for International Communications and Information Policy of the U.S. Department of State, Jorge Alvarez Hoth, Under Secretary of the Mexican Ministry of Communications and Transportation and Jorge Arredondo Martinez, Chairman of Mexico's Federal Telecommunications Commission.

The signing of the protocols is the culmination of several years of bilateral discussions to find the appropriate technical mechanisms to achieve cross-border compatibility for both countries. Preparatory discussions within the U.S. government were organized by the Department of Commerce -- National Telecommunications and Information Administration (DOC/NTIA), with participation by the Departments of Homeland Security, Energy, Air Force, Army, Navy, Treasury, Justice, Agriculture and Interior as well as the Federal Aviation Administration, U.S. Coast Guard, Veterans Administration and NASA. The discussions were led by the U.S. Department of State.

The remainder of this period Ad Hoc 170 started working to prepare these signed protocols for inclusion in the NTIA Manual. Ad Hoc 170 prepared a memorandum to the IRAC with a redline strikeout document added these new protocols and modifying text where needed to update Chapter 3 of the NTIA Manual. The IRAC approved these proposed changes to the NTIA Manual.

Ad Hoc 170 started addressing an issue of cross-border communications in NTIA administered bands which was raised by the representative of the Department of Homeland Security. This issue has proved complex with IRAC, NTIA and the State Department completing work on a coordinated U.S. position very early. A U.S. delegation composed of certain IRAC agencies continued work on this issue into 2006.

Ad Hoc 170 also addressed U.S. positions on draft protocols for the 138-144 and 162-174 MHz bands in order to support an HLCC preparatory meeting in Mexico City in early 2006.

The followings are titles of memorandums that were referred to the IRAC for approval to support U.S. positions on topics that originated in the Ad Hoc 170:

- Draft Concept Paper and Interim Protocol Concerning the Allotment, Assignment and Use of the 380-399.9 MHz Band for Fixed and Mobile Terrestrial Non-broadcasting Services Along the Common Border (March 2005)

- Draft U.S. Position for Negotiations with Mexico of a New Protocol with Narrative Text on Six Points Remaining Before Reaching Final Agreement for Sharing the 406.1-420 MHz Band in the Common Border Area and a List of Six Mexican Receiver Sites (January 2005)

- Draft U.S. Position in Negotiations with Mexico of a New Sharing Protocol on Segmentation of the 406.1-420 MHz Band in the Common Border Area (January 2005)

- Draft Diplomatic Note to Mexico to Modify the Administrative Arrangement Between the United States of America and the United Mexican States Concerning Radio Frequencies Used for Special Purposes to Remove Two U.S. Radio Frequencies, 407.8500 MHz and 415.7000 MHz. (March 2005)

- Draft U.S. Position for New Protocol for Sharing the 406.1-420 MHz Band in the Common Border Area (March 2005)

- United States and Mexico Sign Border Spectrum Accords (August 2005)

- Draft U.S. Position on HLCC Working Level Meeting in Southern Arizona Regarding Cross-border Communications (November 2005)

- Draft Amendment of Chapter 3, NTIA Manual, to Incorporate Two New United States -- Mexico Protocols (September 2005)

This work resulted in the completion during 2005 of a protocol to cover sharing in the 406.1 to 420 MHz band and an interim protocol for sharing the 380-399.9 MHz band.

Ad Hoc 181

Ad Hoc 181 recommends U.S. proposals and positions with respect to modification of existing and development of new U.S./Canada radio frequency coordination agreements or arrangements. It is currently working with to prepare recommendations regarding an update to the "1962 Agreement for Radio Frequency Coordination and Use of Radio Frequencies Above 30 MHz," dated October 24, 1962.

Officers and Members:

Convener - Spalt (State)
Secretary – Darnell Mallory

Agriculture - Mayo
Air Force - Miller
Army - Weaver
Coast Guard - Lamb
Commerce - Jackson
Energy – Hollingsworth
FAA - Murphy
Homeland Security – Murphy
Interior -Gladden
Justice - Thomas
NASA - Hollansworth
Navy - Epps
NSF - Gergely
NTIA – Crandall
Treasury - Robles
VA - Blais

FCC – Lagerwerff (Liaison)

Activities during this Reporting Period: Ad Hoc 181 met eight times in 2005. It considered U.S. and Canadian proposed amendments to the 1962 U.S.-Canada Agreement on the *Coordination and Use of Radio Frequencies Above 30 Megacycles per Second*. The amendments to the 1962 Agreement will in effect create a replacement agreement that is presently titled General Coordination Agreement (GCA). The GCA will include frequency bands below and above 30 MHz. A principle of the GCA is that it will not apply to space radiocommunication services; therefore, space services presently coordinated under the 1962 Agreement will be coordinated under the Radio Regulations of the International Telecommunication Union or under new bilateral agreements. In this regard, Ad Hoc 181 considered a new draft agreement for the coordination of earth stations, operating in the 5925-6425 MHz band, with respect to terrestrial stations. This draft was not sent to Industry Canada (IC) as the authority to negotiate the agreement had not been granted by State.

In June 2004, a delegation of federal agencies met with IC in Ottawa to negotiate the text of the GCA. There was general agreement on much of the text of the GCA and IC's proposed model for annexing various coordination arrangements, including FCC/IC

"interim" arrangements, to the umbrella GCA. The area of greatest difference between the U.S. and Canada is the amendments to Arrangement C of the 1962 Agreement. Ad Hoc 181 reviewed the output documents from the June meeting with a view to finalizing text with IC at the next negotiation meeting. Additionally, it completed work on a number of follow-up actions from the June 2004 meeting. One action was a response to IC concerning redefining Line A by geographic coordinates instead of city names. Ad Hoc 181's draft response was referred to the IRAC and approved and subsequently sent to IC.

Ad Hoc 181 considered and tabled a new arrangement to the 1962 Agreement, or possibly the GCA depending on the timing of the possible conclusion of an arrangement, based on band segmentation in federal government VHF and UHF bands. NTIA and IC worked on studies of sharing/segmentation options for the arrangement. Discussion of this arrangement with IC has been difficult due to the large number of incumbent users on both sides of the border, and it appears unlikely that a new arrangement will be concluded or concluded as originally considered.

During this reporting period, the Department of State approved the negotiation of a coordination/sharing arrangement for Intelligent Transportation Systems in the 5850-5925 MHz band. This band includes existing federal government operations that will need to be taken into account in the development of the arrangement. Ad Hoc 181 has begun to look at the federal operations in the U.S-Canada border area to develop the U.S. position for the negotiation of the arrangement.

Additionally during this reporting period, Ad Hoc 181 considered amendments to the 1973 Agreement between the United States and Canada for Promotion of Safety on the Great Lakes by Means of Radio. The proposed amendments are to the Articles of the Agreement which has treaty status. The provisions of the Agreement require that amendments to the articles be ratified by the President. Although the Ad Hoc 181 representatives have agreed to the proposed amendments, the Department of State has not approved negotiation and conclusion of the amendments.

Other Ad Hoc Groups

During 2005:

Ad Hoc 206 (Convener Vernita Harris (NTIA) and Secretary William Mitchell (NTIA)) did not meet because it had completed its work on the outcome of WRC-2003.

Ad Hoc 213 (Convener Joseph Hersey (CG) and Secretary Stephen Veader (NTIA)) began work under a new terms-of-reference to review NTIA management practices.

Ad Hoc 214 (Co-Conveners Merri Jo Gamble (Justice) and Julio Murphy (DHS)) drafted a recommendation to revise the NTIA Manual with respect to procedures to facilitate use of public safety interoperability channels.

The Secretariat

The purpose of the Secretariat is to record, document, archive, and provide the needed clerical and technical support necessary to carry out the affairs of the IRAC. The Secretariat provided support for eighty-two meetings in 2005 and distributed through list servers and the FreqNet 7,853 documents to the members of the IRAC, its Subcommittees and Ad Hoc groups. All the documents were distributed electronically.

AUTOMATION

NTIA maintains a public website to provide information on the IRAC. This site includes updated information on the IRAC, its members, its subcommittees, and private sector presentations at http://www.ntia.doc.gov/osmhome/irac.html.

The IRAC distributes its documentation almost entirely through electronic means, whether by email or via NTIA's FreqNet website. This website is accessible only to NTIA staff and the participating agencies.

During 2005, deployed its FMRS Remote Access Classified laptops and Sectera (classified) modems. These devices enable each of the IRAC agencies to obtain classified IRAC documentation and to request assignment remotely for classified systems.

BRIEFINGS

During 2005, the following briefings were provided to the IRAC. Non-federal briefings were provided under the requirements stated in the NTIA Manual Chapter 11.

Quantifying the Cost of Interference: NASA sponsored a briefing by Dr. Charles Jackson. Dr. Jackson presented a method for calculating the cost to public mobile operators associated with varying levels of noise. Overcoming noise requires higher transmit powers or smaller cell areas.

UWB EMI to Aircraft Radios: Mr. Jay J. Ely presented the results of NASA's measurements study on UWB EMI to Aircraft Radios: Field Evaluation on Operational Commercial Transport Airplanes. The preliminary results indicated that UWB signals can interfere with aircraft equipment under the test set up.

Coordination of Windmill Locations: Mr. Kurt Oliver and Mr. Les Polisky from Comsearch and Ms. Laurie Jodziewicz representing the American Wind Energy Association (AWEA) presented views regarding the need to coordinate proposed windmill sites. Wind energy represents a key component of the national energy policy, yet the windmills present a potential blockage for radio signals, particularly point to point microwave.

GPS Re-Radiators: NASA sponsored a briefing by Dr. Trent A. Skidmore, Experimental Results of GPS Re-radiator Interference Testing at Ohio University. The research was funded via a grant from the NASA Glenn Research Center in cooperation with the U.S. Department of Transportation with support from Scott Pace (NASA), James Miller (Transportation), Jim Hollansworth (NASA), and Per Enge (Stanford University). Dr. Skidmore indicated that the objectives of the tests were to assess the impact of GPS re-radiator interference on unknowing users of GPS, to provide meaningful data from which to draw operationally-meaningful conclusions, and to conduct experiments in a safe, controlled environment (anechoic chamber).

The IRAC also hosted a special meeting specifically to hear briefings by industry and government regarding GPS re-radiators. At this meeting the following organizations provided presentations:

GPS Networking, GPS Source, GPS Outfitters, 3M Company, the Aeronautical Flight Test Radio Coordinating Council (AFTRCC), Army Spectrum Management Office, GPS Industry Council, and the Air Force Battle Lab.

Department of Justice Spectrum Management Business Processes: The Justice Representative, Mrs. Merri Jo Gamble briefed the IRAC on the work Justice has done to define their spectrum management business processes. They reviewed spectrum management groups, interfaces, activities, deliverables and accomplishments in terms of work flow and time requirements. They used this information in defending their staffing requests and contractor requirements.

President's Spectrum Policy Initiative for the 21st Century Implementation: NTIA OSM Associate Administrator Fredrick R. Wentland briefed the IRAC on the implementation of the Presidential Memo directing Executive Branch action to reform spectrum management.

Exercise Pinnacle 2005: Mr. Marshall Ross from OSM's Emergency Planning and Public Safety Division provided a briefing on experience of Exercise Pinnacle 2005. He also provided initial input regarding Forward Challenge 2006.